

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003237 A1

- (51) International Patent Classification⁷: **C08L 83/04**, C08K 5/5415, C08F 291/02, G02B 1/04
- (21) International Application Number:
PCT/DK2004/000476
- (22) International Filing Date: 2 July 2004 (02.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PA 2003 01027 4 July 2003 (04.07.2003) DK
- (71) Applicant (for all designated States except US): NANON A/S [DK/DK]; Priorparken 886, DK-2605 Brøndby (DK).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): KARTHÄUSER, Joachim [DE/SE]; Blockvägen 14B, Sollentuna, S-192 51 (SE).
- (74) Agent: HEGNER, Anette; NKT Research & Innovation A/S, Group IP, Blokken 84, DK-3460 Birkerød (DK).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD OF PRODUCING AN INTERPENETRATING POLYMER NETWORK (IPN), THE IPN AND USE THEREOF

(57) Abstract: The invention comprises a method of producing an interpenetrating polymer network (IPN) comprising the steps of i) providing a silicone polymer composition; ii) providing one or more monomers for a polymer; iii) providing a solvent for the one or more monomers; iv) exposing said silicone polymer composition to said one or more monomers and said solvent to precipitate monomer within said silicone polymer composition and v) polymerizing said monomer to form an IPN, wherein said solvent has a surface tension at the exposing step of about 15mN/m or less. It is preferred that the solvent, which is preferably CO₂, in the exposing step is in or near its supercritical state. The method is fast and simple, and the dispersion of the monomers may be controlled to thereby control the amount and distribution of the interpenetrating network in the silicone material. Further more the method results in new materials, where silicone polymers are used as the basic materials.



WO 2005/003237 A1